THE RAMTOP

MAY 1986

PUBLISHED BY THE
GREATER CLEVELAND SINCLAIR USERS GROUP

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EAST SIDE GROUP MEETS AT THE EUCLID SQUARE MALL
IN THE EUCLIDIAN ROOM 7:30 P.M.
EVERY FIRST FRIDAY EACH MONTH
CONTACT: MAX SCHOENFELD (216) 371-1096

A short note to our friends from other newsletters and magazines. You are welcome to use any of our material, news, adds, or programs if YOU: (1) Tell where it came from (RAMTOP Cleveland, Ohio) and (2) The author's name that wrote the article. We would appreciate it if you would send us a copy of the newsletter that it appeared in! Unless otherwise notified we will do the same.

THANK YOU FOR YOUR INTEREST IN OUR NEWSLETTER !

THE TSU-BBS IS ALIVE

SYSOP:Chris Raynak PHONE:216-327-1099 PARAMETERS:8/2/N. PASSWORD:sieg

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T/S RESOURCES

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news/rumors
hardware software literature

May 1986 by Andy Kosiorek

Cincinnatti T/S Computer Fest:

"SUPERCALAFRAGALISTIC"

Thats my impression of the Fest. Every one who attended had a great time. On Sat. the crowd was elbow to elbow in the exhibition room. A lot of software and literature was sold plus some big ticket items such as QL's and Disk Drives. I predict that there will be another T/S Fest in 12 to 18 months.

Our thanks to all of our Club members who put in a lot of work preparing for the event and man- ing our table.

Also a "job well done" to the Cinci Fest Committee. They put in a lot of hours to make the event a big success.

All of our Club members who attended should have a lot of stories to tell at the next several meetings.

TS 2068 Technical Manual Reprint

The reprint of the 2068 tech manual is now available @ $25.00 from Time Designs Magazines.

It has been re-edited, known errors have been corrected, and contains some additional charts, and technical data. The printing and binding are very well done. A quality job. If your a techy type you will want one for your reference library.

CP/M and Disk Drives.

CP/M operating systems are now available for owners or new buyers of Zebra or Aerco Disk Systems. I saw both demonstrated in Cinci. It opens up a whole new world of software for 2068 users.

FORTH:

Another language available for our computers is "Forth." It is available for the 2068, Specrum and ZX-81.

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T/S RESOURCES

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news/rumors
hardware software literature

May 1986 by Andy Kosiorek

AMSTRAD BUYS OUT SINCLAIR!!!!!!!

About April 7th, at a packed press conference in London, Sir Clive and Amstrad chairman Alan Sugar announced that Amstrad had bought the rights to sell and manufacture all existing future Sinclair computers.

Amstrad paid $7.5 million for the intellectual property rights to the Spectrum, ZX81, and QL. In addition Amstrad will control the marketing of existing stocks and order commitments.

The Sinclair brand name is part ot the deal, meaning that Sinclair computers will still be sold thoroughout the world.

The Spectrum machines, will cover the low priced home market while the Amstrad machines cator to the higher, business end of the market.

The QL and all versions of the microdrive will be discontinued. A new version of the Spectrum will be offerred with a built in cassette deck.

Also in the works is a Amstrad 3" disk drive accessory for the Spectrum.

The ZX-81 was discintinued by Sinclair some time ago.

Amstrad also has the rights to market future Sinclair Computers, such as the Pandora, a portable computer, incorperat- ing a development of Sinclair's flat screen display.

Reaction in the UK, from retailers and software houses appear favorable at this time. Amstrad has a good reputation for quality products and on time marketing.

Reaction in the USA is mixed. It looks like a good deal for 2068 and Spectrum owners. QL enthusiests however have reason for concern. There is talk that Amstrad would be willing to sell the manufacturing and marketing rights for the QL to the right buyer, but this has yet to become fact. However this did not seem to hurt QL sales at the Cinci Computer Fest.

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OnLine

with Eric Yruegas

Hello, sports fans! Here I am again, with another article chock full of good stuff.

I was looking for a program for a friend in Hawaii (you out there, Pete?), and I came across one of the early programs I wrote when I discovered graphics. I affectionately call it "Moon Walking Michael." I think you will like it...

```
5 FOR N=0 TO 13:SOUND N,0:NEXT N
10 DATA 16,BIN 111000,BIN 10101100,BIN 10010010,BIN 10010001,16,
   16,16:FOR N=0 TO 7:READ A:POKE 65368+N,A:NEXT N
12 DATA 16,16,16,16,16,16,16,16,24,20,20,18,20,20,20,26,24,20,18
   ,33,33,34,36,50,24,20,35,34,68,72,196,96,24,20,36,34,66,34,
   204,98,24,20,20,18,34,36,100,18,24,20,20,10,10,26,14,6,0,120,
   252,244,254,252,120,56
15 FOR N=0 TO 63: READ A: POKE USR "B"+N,A:NEXT N
20 PRINT AT 19,0;"Look! I'm glidin'!"
25 FOR N=20 TO 10 STEP -1
30 PRINT AT 10,0;"(32 underline characters)"
32 SOUND 6,12;7,0;8,16;9,16;10,16;12,5;13,14: PAUSE .5
35 PRINT AT 8,N;CHR$ 152;" ";AT 9,N; CHR$ 144;" ";AT 10,N;CHR$ 1
46
40 PRINT AT 10,N;CHR$ 147:PAUSE 5:PRINT AT 10,N;CHR$ 148:PAUSE 5
45 PRINT AT 10,N;CHR$ 149:PAUSE 5:PRINT AT 10,N;CHR$ 150:PAUSE 5
50 PRINT AT 10,N;CHR$ 151:PAUSE 5
55 SOUND 8,0;9,0;10,0
60 NEXT N
65 FOR X=0 TO 13:SOUND X,0:NEXT X
100 PRINT AT 10,N+1;CHR$ 146
105 PRINT AT 19,0;"Look! There's the fireworks!"
110 FOR X=1 TO 15:SOUND 6,6;7,7;8,16;9,16;10,16;12,75,13,8:PAUSE
    1:LET A=20+(RND*215): LET AA=120+(RND*35): FOR Y=1 TO 2+INT
    (RND*10)
115 LET N=INT (RND*4)+3:LET B=INT (RND*20)-INT (RND*20): LET I=
    INT (RND*20)-INT (RND*20)
120 PLOT A,AA:DRAW B,I:NEXT Y:NEXT X
125 FOR N=0 TO 13:SOUND N,0:NEXT N
```

Well, there it is. Kind of long (it can be simplified), but at the time I wrote it, I didn't think of simplicity, because I knew that I had 32K to deal with...

Anyway, enough frivolity. On with the real stuff. I just got a program called Greeting Card Designer, by Zebra Systems. It is a program that allows you to make a "card" suited for nearly any situation.

Greeting Card Designer loads up after a while, as it loads 19K of BASIC and 20K of Machine Code. Whew! After loading, a screen comes up and asks you to make a selection from the following: Edit Card, Print Card, Erase Card, Save/Load Card, and Select Printer. The manual suggests that you do the "Select Printer" first. I concur (I once had a perfect card ready to print and when I went to print it, I couldn't understand why my printer just sat there and said "What?" I forgot to select a printer!!).

GCD currently supports the Epson, Gemini, Memotech/Panasonic, Spirit-80, Seikosha, and Prowriter printers. I am sure that others will work, but you might have to experiment with settings. After you select a printer, it asks you to select an interface. AERCO, Tasman-B/C, and the A&J interfaces are supported. You are then returned to the MAIN MENU.

Edit Card allows you to enter text, and arrange graphics for either the inside or the cover of the card. You also can choose a border. There is no provision to have a blank border. There are 22 graphic figures on the other side of the master tape. If you do not find a suitable graphic from the appendix in the back of the manual, you can create your own with the GRAPHIC DESIGNER UTILITY. This is a completely different program. I have used it to make up for the lack of certain graphics (computer, etc.). It works well, but it is rather slow.

All in all, the TS2068 Greeting Card Designer is a good value. I have had requests to print up invitations and "Happy Birthday" cards. I would recommend it to anyone with an 80 column printer. One point: I have had problems trying to get it working with a Prowriter (C.Itoh 8510). If you have one, write me before purchasing, as I have been working out a solution for this problem. I have written Zebra, and expect to get some results soon.

Well, that about wraps it up for this month. See you next month! If you have any questions or comments write to the below address and I will try to answer them the best I can...

OnLine
..c/o: Eric Yruegas
4706 Langley Avenue
Whitehall, OH 43213-3124

Here is your editor having the time of his life! Let me take a moment to once again THANK all those responsible for putting together the Fest!! IT WAS GREAT!!

FREE AD:
FOR SALE: 2068 and Apple monitor Only $150.00! Has less than 20 hours of use! If you are interested, call 661-4105. (I am selling it for a friend)

May Editorial

Let me say a big "HOWDY!" to all of you! I sure hope your April and May hasn't been as busy as mine! I wish I could have a few more hours tacked on to each day so I could just keep up! The RAMTOP is late this month due to the Computer Fest, relatives coming for several days, and my crazy work schedule! This will not be a trend if I can help it! Sending your articles on Tasword has been a <u>great</u> help to me as well as making the newsletter look better and pack more information. KEEP ON SENDING THOSE GREAT ARTICLE! As you well know, YOUR articles are what keep this publication alive and well! Enough said, on to the matters at hand.

The Cincinnati Computer Fest was absolutely <u>GREAT!!!</u> If they have another one (I'm pretty sure they will) you should go at all cost! My only real regret was that I could only go for one day! (Sat.) I was also rather disapointed that nobody from the John Oliger Co. was able to make it. I know that I would have purchased his disc system right then! (I ordered it anyway) I never saw so much NEAT computer stuf in one place before! It was just like computer heaven must be! It's a good thing that I didn't take a lot of money or I would be broke now. As it was I bought a DSDD disc drive and a bunch of software.

Let me tell you, a LOT of money changed hands! Of course we all know that a dollar for Sinclair products goes much further that for other computer systems! I would have to say that one of the biggest hits there was the QL. Many were sold and many orders were taken. I mean when you think of it, it's hard to believe that you can get computer that has high res graphics, 32 bit, micro drives(TWO) built in, and much more, AND including a high res color monitor, AND a high quality printer with graphics and letter quality mode for well under $1000 bucks! To top it off, they throw in a Great software package that is worth practicly the cost (or more) of the computer for free! I think it will be a real shame if the QL is dropped and not picked up by another company since Amstrad doesn't plan to continue with it.

Disc drives were also a big hit especially since there are so many to pick from now! There were also reps for micro drives and practicly every supplier of Sinclair and Timex equipment and software! Many user groups were there also. I was able to match up many faces to those we have heard of and talked to but have never seen. I saw one of our writers, (Eric Yruegas) and he is one smart guy! I also talked to Joe Williamson (SUM), Tom Woods, Jack Roberts (TS Connection), Chet Lambert (CTM) and many others.

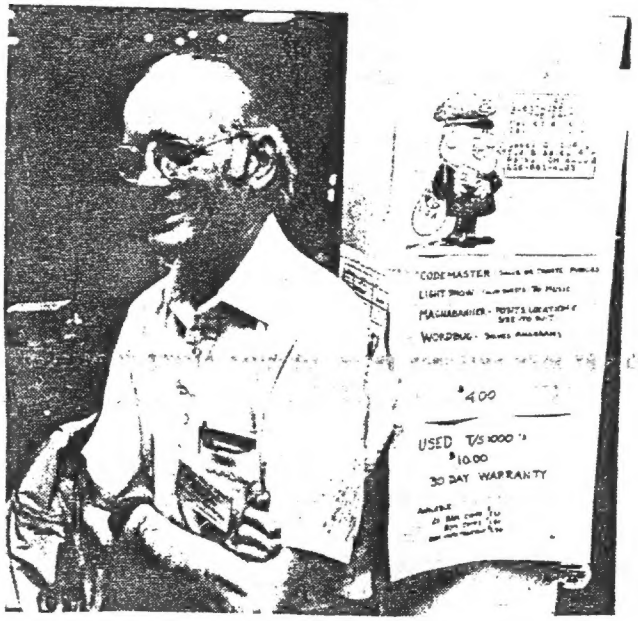
We did very well at our table also. Although I don't have the figures, we did have a great crowd flocking at our table! A BIG thanks to all of our group that manned our table and took part in preparing materials! Also, I want to take a quick moment to thank Toby Radloff for giving me a ride! I wouldn't have been able to make it other wise. Toby, one of our best 1000/1500 enthusiasts, bought a 2068 with the Spectrum ROM and some software and he likes it a lot!

Our group is on the up swing! We have several new members and several new newsletter exchanges. Our library is moving ahead and hopefuly we will have several library tapes soon so those of you that are anxiously awaiting for a library tape, please be patient a bit longer.

It was brought up at the west side meeting that several suppliers of software and hardware for the Sinclair line of computers have decided to sell products exclusively for the QL! I would hope that they would please realize that we who own other Sinclair computers also would like to order products and continue to have their support for ALL the Sinclair line of computers! With the possible discontinuation of the QL maybe they will consider us important once more.

I would also like to let all the groups that exchange with us as well as all the other Timex/Sinclair groups, know that we feel that it would be a very good idea if we form a common link and pool our resources to keep us strong and well informed. Why not drop me a note or give me a call some evening? (216-661-4105) *James G. DuPuy, 6514 Bradley Ave. (BOHN), Parma, Ohio, 44129.*

You will find in this issue a few pictures from the Fest. They are courtesy of TOM SIMON.



Here is TOM JENNINS at our table.

This is (I believe) TOM HURST, also at our table.

---------- NOTES ----------

THIS MONTH I'VE A COUPLE OF HARDWARE TIPS THAT WERE PROVIDED BY JIM LEWIS THAT WILL BE OF INTEREST TO 2068 OWNERS. IF YOU HAVE A 2068 WITH A WIRED IN SPECTRUM ROM AND HAVE HAD SOME PROBLEMS WITH THE COMPUTER INITIALIZING ON THE SPECTRUM ROM AND HAD TO TURN THE MACHINE ON & OFF SEVERAL TIMES, DON'T WORRY ANY MORE BECAUSE HERE IS THE FIX. YOU MUST REPLACE THE 1 MFD. CAPACITOR MARKED C-21 LOCATED IN THE LOWER CENTRAL AREA OF THE BOARD WITH A 10 MFD. CAPICITOR AND THE 2068 WILL INITIALIZE POSITIVELY IN BOTH MODES. THE 12 VOLT REGULATOR, LOCATED IN THE UPPER LEFT SIDE OF THE BOARD RUNS ON THE WARM SIDE. FOR COOLER RUNNING ADD ONE OF THOSE CLIP ON HEAT SINKS TO U-8. JIM ALSO FOUND AN ERROR IN THE SCHEMATIC FOR THE 2068. THE ROMCS SIGNAL FROM THE SCLD GOES TO THE W1 JUMPER (NOT THE W2 INDICATED ON THE SCHEMATIC) AND THE MREQ SIGNAL GOES TO THE W2 JUMPER. APPARENTLY THE SIGNALS ARE REVERSED ON THE DIAGRAM.

RICHARD SCHNEIDER OF AUDIO PROFESSIONALS IN AKRON PROVIDED A TIP ON HOW TO MODIFIY A POWER STRIP WITH METAL OXIDE VARISTORS AS PROTECTION AGAINST POWER SURGES. PURCHASE 3 MOVS (RADIO SHACK PART 276-568B) PUT THEM BETWEEN THE HOT, NEUTRAL AND GROUND OF THE POWER STRIP AS SHOWN IN THE DIAGRAM FROM THE DECEMBER 1983 ISSUE OF BYTE MAGAZINE. IF YOU WANT TO, YOU CAN ASORB ADDITIONAL INTERFERENCE BY ADDING A .01 MFD., 1000V. Z5U CAPAICITOR IN PARALELL WITH EACH MOV. WHILE THIS WILL PROTECT AGAINST VOLTAGE SURGES IT WILL NOT PROTECT AGAINST LIGHTNING. TO PROTECT AGAINST LIGHTNING BOTH THE HOT AND NEUTRAL LINES MUST BE DISCONNECTED BECAUSE OF CAPACITIVE COUPLING OF THE LINES. RICHARD SUGGESTED A RELAY AS A POSSIBLE SOLUTION. FOR FURTHER INFORMATION READ AN ARTICLE BY HERB FRIEDMAN IN THE COMPUTER DIGEST SECTION OF THE JUNE 1986 ISSUE OF RADIO ELECTRONICS.

HERE IS SOME GOOD NEWS FOR THOSE WHO HAVE BEEN CONCERNED ABOUT THE LACK OF REPLACEMENT SCLD'S FOR THE 2068. THE CAPITOL AREA TIMEX/SINCLAIR USERS GROUP HAS PURCHASED 100 OF THE SCLDS. THEY ARE SELLING THEM FOR $18. EACH OR $15. IN QUANTITIES OVER 5. WRITE TO MARK FISHER, CAPITOL AREA TIMEX/SINCLAIR USERS GROUP, P.O. BOX 725, BLADENSBURG, MD. 20710. ELECTRONIC SUPLUS ON PROSPECT NEAR THE CLEVELAND GREY'S ARMORY HAS SOCKETS FOR THIS CHIP SHOULD YOU HAVE TO REPLACE IT.

IF YOU ARE IN DETROIT ON THE SECOND SUNDAY OF THE MONTH YOU MAY WANT TO CHECK OUT THE TIMEX GROUP THERE. THEY MEET AT 2:00 PM AT THE LAWRENCE INSTITUTE OF TECHNOLOGY AT 10 MILE AND EVERGREEN ROAD IN THE SCIENCE BUILDING, ROOM 116. FOR FURTHER DETAILS CONTACT STEVE SPALDING 313-546-1190.

FORTH IS LANGUAGE WHICH IS IDEAL FOR MANY PURPOSES AND PRATICAL INTERFACING WITH THE REAL WORLD. IT IS HOWEVER A DIFFICULT LANGUAGE AND INFORMATION ON FORTH IS NOT ALWAYS AVAILABLE AT THE LOCAL BOOKSTORE. MOUNTAIN VIEW PRESS SPECIALIZES IN FORTH BOOKS AND PROGRAMS. THEY EVEN HAVE PROGRAMS FOR THE JUPITER ACE AND T/S 1000. WRITE TO THEM MOUNTAIN VIEW PRESS, P.O. BOX 4656, MOUNTAIN VIEW, CA. 94040 OR TELEPHONE 415-961-4103. ONE OF OUR MEMBERS,DON McCABE, HAS WRITTEN AN IMPLEMENTATION OF FORTH FOR THE 2068, WHICH HE HAS AVAILABLE FOR SALE. CONTACT DON AT ONE OF THE WEST SIDE MEETINGS.

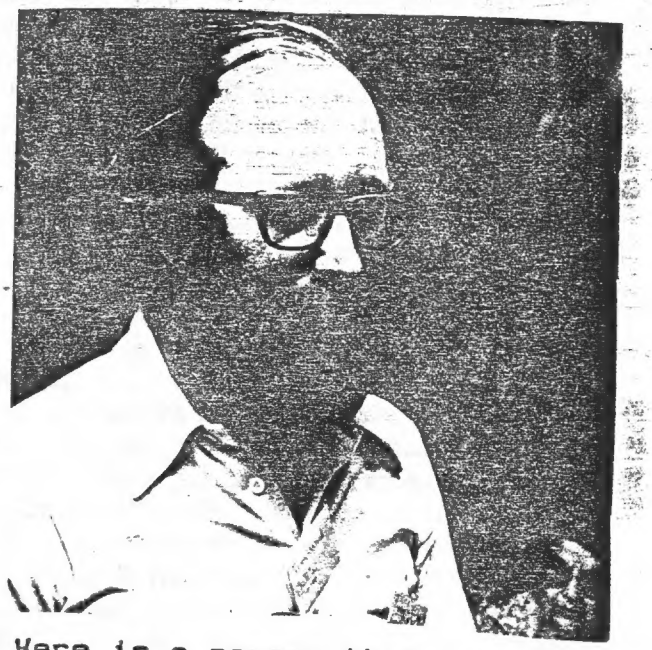
ONE OF MY FAVORITE PROGRAMS, MACHINE CODE TUTOR HAS BEEN CONVERTED TO RUN ON THE 2068. THE COST IS AROUND $18.00 AND SHOULD BE AVAILABLE FROM MOST US VENDORS.

FROM E.A.BROWN COMES ONE OF THE BETTER DEALS ON THE COMPUSERVE STARTER KIT. IT COMES WITH 5 HOURS OF LOG ON TIME FOR $18.95. EACH HOUR OF TIME NORMALLY WOULD COST BE $6.00 SO IT IS A SIGNIFICANT SAVING. ALSO FROM BROWN AND SEVERAL OTHER VENDORS IS THE HACKER'S HANDBOOK BY HUGO CORNWALL. I HAVE STARTED READ THIS BOOK AND WOULD RECOMEND IT TO ANYONE WHO IS INTERESTED IN TELECOMMUNICATING. THIS IS A REVISED EDITION AND SOME MATERIAL HAS BEEN REMOVED FOR LEGAL REASONS. EVEN SO IT HAS QUITE A LOT OF INFORMATION THAT WILL HELP OUT A USER WITH VARIOUS SYSTEMS. THE COST IS $12.95. CALL BROWN AT 612-762-8847.

A CATALOG IS AVAILABLE FOR $2.00 FROM DICK SMITH ELECTRONICS, PO BOX 8021, REDWOOD CITY, CALIFORNIA 94063. THIS CATALOG HAS AN ODD MIXTURE OF HUMOR AND INFORMATION ALONG WITH MERCHANDISE. THE BACK OF THE CATALOG HAS ASCII CODES, RESISTOR AND CAPACITOR COLOR CODES AND FORMULAS FOR SATELLITE TRACKING. I PURCHASED A PROJECT BOX FOR AN INTERFACE FOR ABOUT $3.00. IF YOU ARE NOT GETTING THIS NOW AND ARE INTERESTED IN HARDWARE DO GET IT.

AN APOLOGY IS IN ORDER FOR THE BIBLIOGRAPHY THAT WAS PUBLISHED A COUPLE OF ISSUES AGO. I PROVIDED JIM DUPUY WITH A WORK COPY WHICH WAS NOT COMPLETE. THE FULL FILE IS ABOUT TWICE AS LONG. I'LL BRING THE FILE TO THE NEXT FEW MEETINGS FOR ANYONE WHO WISHES A TASWORD FILE COPY. FOR OUT OF TOWN MEMBERS SEND A TAPE AND I WILL COPY THE FILE ONE TO IT.

THOMAS SIMON



Here is a person that most of us have heard of a lot. He wrote the program: PRO FILE. We may be switching to PRO FILE to keep our group records. This is TOM WOODS.

##

CRACKER JACK

##

SECOND OF A SERIES

Last month we learned about headers and wrote a header reader program. This month, we will use the header reader to help load and stop those unstoppable and unmergeable programs.

WHY PROGRAMS CAN'T BE STOPPED

BASIC programs that can't be stopped contain pokes that cause a crash if BREAK is pressed. Because the programs autostart and the pokes are contained in the first part of the program, it is extremely difficult, if not impossible to stop the program. The two most common pokes are POKE 23659,0 and POKE 23613,0. Look in the systems variables section of the Sinclair manual for more details on these pokes. Other programs, in addition to being unstoppable, are unmergeable. Since the program can't be merged to remove the crash pokes, the program has to loaded somewhere else in memory so that the program can be examined, modified, and rewritten. This is most easily done with a "false header".

USING A FALSE HEADER

Use a header reader to examine the header of the program you want to stop. Stop the tape IMMEDIATELY after the header has loaded in! Remove the tape from your recorder. Make a false header to load the program as code. If for example, the header reader says that the BASIC program is 94 bytes long, enter: SAVE ""CODE 30000,94 On a separate tape, save the code. Rewind the tape with the false header and enter: LOAD ""CODE Stop the tape IMMEDIATELY after the header has loaded. Put the original tape back in the recorder and continue loading it. The BASIC program has now been loaded into 94 bytes starting at 30000. The program can now be examined by peeking. This technique is basic to cracking programs.

EXAMINING THE PROGRAM

With the program loaded as code in memory, we now need a method of examining the program. The program in Listing #1 does this by providing a pseudoLISTing. Enter the program and run it. Presuming that you have a program loaded as code at 30000 in memory, enter 30000 to the prompt. The program will start to interpret the code characters as if they were a BASIC program. One advantage of the program is that it also shows control characters that have been embedded in the BASIC program that you are trying to crack.

These control characters are printed in inverse so that you will easily recognize them. The backspace character is printed as an inverse "b", and Enter or carriage return is printed as an inverse "c". Each line should end with a black "c". Many commercial program have white ink, white paper characters embedded in the listing to make the listing difficult to read. These control characters can often be thwarted by LLISTing the program. Another feature that the pseudoLISTing program has is that it shows the TRUE integer value of a number following the text of the number. Sinclair computers store the true value of any number in a program line as a five byte representation of number. This five byte number is the one that is actually used at run time by the computer. Some programmers POKE in different numbers than the apparent numbers to fool hackers. If both the numbers in white and in inverse agree, then the number shown in real, otherwise, use the number in inverse characters. It is the correct one. The one exception to this rule is if the number is a floating point number. (See page 258 of the T/S 2068 User Manual for a good discussion of how numbers are stored.

Programs that are unmergeable have been doctored by the programmer to confuse the computer when you try to merge it. Each BASIC line starts with two bytes that contain the BASIC line number. The line number is followed by two bytes which tell the number of characters in the line. The way that the computer finds its way from line to line is by adding the the number of characters in the line to its present position to find the next line. This process works fine so long as the number of characters in the line is accurate. What the programmer does to make the program unmergeable is to poke the last line's number of bytes with the wrong number. When the computer trys to merge the program, it gets to the last line and gets lost trying to digest the incorrect information about the line. For this reason, the pseudoLISTing program print "Line doesn't end with enter." if the program gets lost.

EXAMPLES

Listing #2 is the pseudoLISTing from the program Spellbound. The program is normal until the very last statement. The statement looks like it contains the number 26624, but the number that the program will use is 26627. If you should load the program and RANDOMIZE USR 26624 you will see an animated fireworks display, with the message, "Hello Hacker. Fancy meeting you here." This is one of the joys and surprises of trying to crack programs.

Listing #3 is the pseudoLISTing from the Spectrum version of the program Strip Poker. In it, the program voices his opinion of hackers. Notice that the second line has a number of 65282. This number is obviously illegal since Sinclairs can't have line numbers greater than 9999. The two POKEs in line 1 are there only to POKE a different

line number (in this case 0) into that line so that it becomes executable. Notice that the first line 3 has several INK 7 control codes in it. This makes the listing after that point invisible when listed on the screen. (It could be LLISTed.) The second line 3 is really the loader program. Also note that there is a statement POKE 23659,0 in line 3. This is a crash poke and isn't needed. The only line needed to load the program would be:

```
1 CLEAR 42774: LOAD "" CODE: RANDOMIZE USR 23301
```

The rest of the program is just protection. The characters in what appears to be line 25605 are just characters that were in the variables area of the program, and are unimportant.

In pseudoLISTing #4, there is an example of an unmergeable program. Note that the listing ends with the message that the line doesn't end with ENTER. The programs that you try to crack may use these techniques, or a variety of combinations. It's a challenge to sort through and break the various protections. For short loader programs such as the examples, it is ususally easier to reenter the program. If you encounter a very long program, you may find it easier to POKE in corrections and resave the code, and then use the reverse "false header" procedure to put a BASIC header on the program. ‡‡ JACK ‡‡

NEXT MONTH: Headerless files.

LISTING #2:

```
10 CLEAR 26050[¢26050]: POKE 2369
3[¢23693],71[¢71]: BORDER 0[0]: CL
S : LOAD ""CODE 16384[¢16384]: RA
NDOMIZE USR 23296[¢23296]: RANDOM
IZE USR 26624[¢26624]¢
```

LISTING #3:

```
1 POKE 23301[¢23301],0[0]: POKE 2
3301[¢23301],0[0]¢
65282 REM ### SLUGS SUK COD ###
    3 LOAD ""  INK 7    INK 7    INK
 7    INK 7    INK 7  INK 7¢
3 CLEAR 42744[¢42744]: PAPER 0[0]
: INK 0[0]: BORDER 0[0]: CLS : P
OKE 23659[¢23659],0[0]: LOAD ""CO
DE : LET l=USR 23301[¢23301]¢
25605 INK 7 REM INK 0fffffffffff
fffff‡
```

LISTING #4:

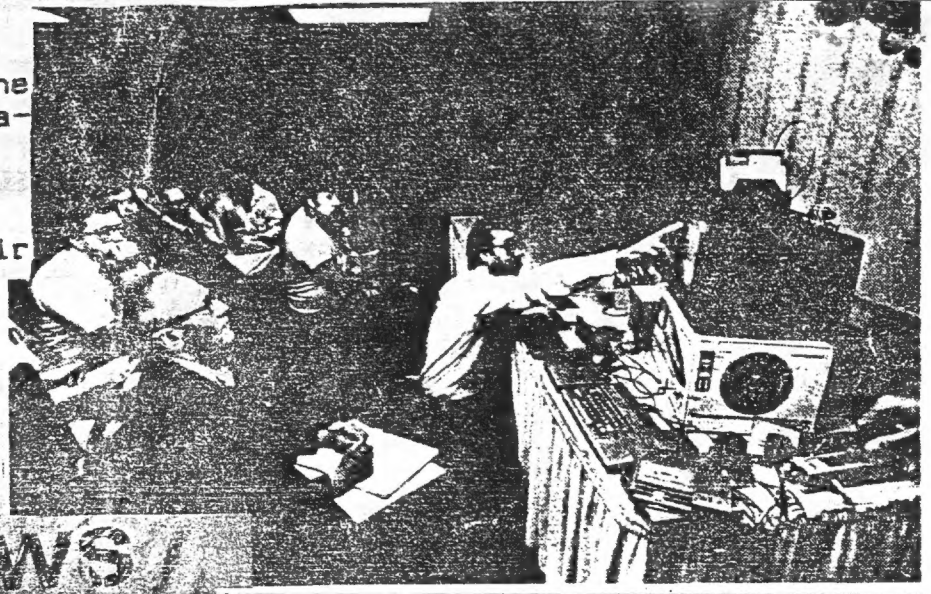
```
10 LOAD ""CODE ¢????0
Line doesn't end with ENTER
```

LISTING #1:

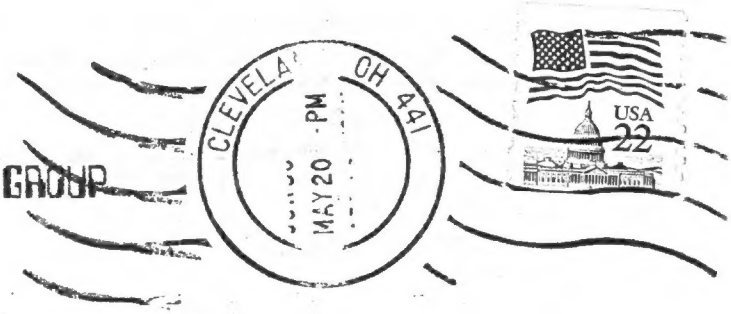
```
   1 REM Pseudo-LISTing program PRINT in lines 100,220,230,240, 310, & 320 can b
e replaced with LPRINT for output to printer.
  10 LET a$="01234567b9???cn? INK PAPER FLASH BRIGHT INVERSE OVER AT TAB ???????
?": REM use the keywords for INK , FLASH ,etc.
  20 DEF FN n(x)=PEEK x+256*PEEK (x+1): REM two byte number
  30 DEF FN l(x)=PEEK x*256+PEEK (x+1): REM line number format
  40 INPUT "What address to start? ";s
  50 INPUT "How many bytes to examine? ";x: LET x=x+s
 100 PRINT FN l(s);: LET s=s+2
 110 LET len=FN n(s): LET s=s+2
 200 FOR n=s TO s+len-1
 210 LET pk=PEEK n
 220 IF pk=14 THEN PRINT INVERSE 1;"[";FN n(n+3);"]";: LET n=n+5: GO TO 300: REM
 prints number  after number slug
 230 IF pk<32 THEN PRINT INVERSE 1;a$(pk+1);: GO TO 300: REM    Prints control c
haracters
 240 PRINT CHR$ pk;
 300 NEXT n
 310 PRINT
 320 IF pk<>13 THEN PRINT "Line doesn't end with ENTER"
 330 LET s=n: IF s>=x THEN STOP
 340 GO TO 100
```

e are two more photos. To the
ght: A seminar on Telecomunica-
ns. (Sat.)

ow:
WOODS and TOM BENT at their
le. (Sync Ware News)



Next month we will have several programs and lots of new and interesting articles! If you haven't sent in your survey, please do so! Thanks Again For Your Support of Our Group!



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